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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,862	11/09/2001	Karen M. Grace	S-97,794	1762
35068	7590	02/25/2004	EXAMINER	
UNIVERSITY OF CALIFORNIA LOS ALAMOS NATIONAL LABORATORY P.O. BOX 1663, MS A187 LOS ALAMOS, NM 87545			SIKDER, MOHAMMAD YUNUS	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 02/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/052,862

Applicant(s)

GRACE ET AL.

Examiner

MOHAMMAD Y SIKDER

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election of Group I including claims 1-47 received on 2/3/04 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

As a result of applicant's election of Group I, claims 1-47 and cancellation of claims 48-193, claims 1-47 are examined in the office action.

Claim Rejections - 35 USC ' 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-8, 16, 22-47 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Rice et al. (3,988,704) in view of Sanders et al. (5,946,097), Bramson (5,422,713) and Li et al. (5,418,058).

Rice et al. (3,988,704) shows light source 50, polarizer 32, photodetector 34, as claimed in claim 1.

Thus, Rice et al. (3,988,704) discloses the invention substantially as claimed except for a waveguide having a thin film of host regent, a phase sensitive detector.

Sanders et al. (5,946,097) shows a phase sensitive detector 23, see col.10, lines 41-50 , Bramson (5,422,713) shows a waveguide 34 and Li et al. (5,418,058) the use of a thin film of host regent such as cyclodextrin, see col. 6, lines 59-68.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a phase sensitive detector 23 as disclosed by Sanders et al. (5,946,097), a waveguide 34 as disclosed by Bramson (5,422,713) and a thin film of host regent such as cyclodextrin as disclosed by Li et al. (5,418,058) in the device of Rice et al. (3,988,704) to achieve the apparatus as claimed, because the use of such phase sensitive detector would phase out the signals, the waveguide and a thin film of host regent such as cyclodextrin on the waveguide would provide better conduction of the light beam.

Regarding the features of Zeeman laser or HeNe laser or formation of cyclodextrin or different waveguide of lock in amplifier the use of the apparatus to PC or

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other organs, Official Notice is hereby taken that it is well known in art for improving transmission of the light beam. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Rice et al. (3,988,704) in view of Sanders et al. (5,946,097), Bramson (5,422,713) and Li et al. (5,418,058) such that the use the Zeeman laser or HeNe laser or formation of cyclodextrin or lock in amplifier the use of the apparatus to PC or other organs for improving transmission of the light beam.

1. **Claims 9-15, 17, 19-21 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Rice et al. (3,988,704) in view of Sanders et al. (5,946,097), Bramson (5,422,713) and Li et al. (5,418,058) as applied to claim 1 above, and further in view of Huang (6,222,951).

As set forth above, Rice et al. (3,988,704), Sanders et al. (5,946,097), Bramson (5,422,713) and Li et al. (5,418,058) disclose the invention substantially as claimed except for the material of waveguide such as silicon nitride or other material.

Huang (6,222,951) shows the use of silicon nitride, see col. 5, lines 40-50.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use silicon nitride for the waveguide, as disclosed by Huang (6,222,951) in the device of Rice et al. (3,988,704) in view of Sanders et al.

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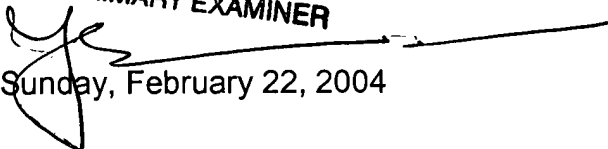
(5,946,097), Bramson (5,422,713) and Li et al. (5,418,058) to achieve the apparatus as claimed, because the use of such silicon nitride for the waveguide would protect the waveguide.

CONTACT INFORMATION

Papers related to this application may be submitted to Group 2870 by facsimile transmission. Papers should be faxed to Group 2870 via the PTO Fax center located in the Crystal Plaza 4. Faxing of such papers must conform with the notice published in the official Gazette, 1096 OG 30 (November 15, 1989). The CP-4 Fax Center number is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application should be directed to M. Sikder whose telephone number is (703) 305-5471.

**MOHAMMAD SIKDER
PRIMARY EXAMINER**


Sunday, February 22, 2004